WHAT IS CLAIMED IS:

1. A process for preparing a porous polymer material which comprises forming pores in a polymer material which contains a leachable particulate by gas foaming and subsequently leaching out the particulate material to form additional porosity.

2. The process of claim 1, wherein formation of the pores by gas foaming is conducted by subjecting a mixture of particles of the polymer and particles of the particulate to an elevated pressure atmosphere of an inert gas such that the gas dissolves into the polymer and then creating a thermodynamic instability such that nucleation and growth of gas pores occurs and the polymer containing the particulate forms a continuous matrix.

3. The process of claim 2, wherein the mixture of particles of the polymer and particles of the particulate is compression molded into a selected size and shape before formation of the gas pores.

4. The process of claim 2, wherein the thermodynamic instability is created by reduction of the pressure atmosphere.

5. The process of claim 2, wherein the gas is CO_2.

6. The process of claim 1, wherein the polymer is a biocompatible polymer.

7. The process of claim 1, wherein the polymer is a biocompatible and biodegradable polymer.

8. The process of claim 1, wherein the polymer is a homopolymer or copolymer of lactic acid and/or glycolic acid.

9. The process of claim 1, wherein the polymer is PLGA.

10. The process of claim 1, wherein the polymer is a blend of a homopolymer or copolymer of lactic acid and/or glycolic acid with another polymer.

11. The process of claim 10, wherein the polymer is a blend of a homopolymer or copolymer of lactic acid and/or glycolic acid with an alginate polymer.

12. The process of claim 1, wherein the particulate is a water-soluble particulate.

13. The process of claim 1, wherein the particulate is a salt.

14. The process of claim 1, wherein the particulate is NaCl.

15. The process of claim 1, wherein the size and amount of the particulate is selected such that an interconnected pore structure in the porous polymer material is formed.

16. The process of claim 13, wherein the amount of particulate is at least 50% by volume of the mixture of particles of the polymer and particles of the particulate.

17. The process of claim 13, wherein the average particle size of the particulate is from 10 to 500 microns.

18. A porous polymer comprising a polymer matrix containing pores formed by gas foaming and pores formed by leaching out of a particulate from the polymer.

19. The polymer of claim 18, wherein the polymer matrix is a biocompatible and biodegradable polymer.

20. The polymer of claim 18, wherein the polymer matrix is a homopolymer or copolymer of lactic acid and/or glycolic acid.

21. The polymer of claim 18, wherein the polymer matrix is PLGA.

22. The polymer of claim 18, wherein the polymer has an interconnected pore structure.

23. The polymer of claim 18, wherein the combination of pores provides a uniform open pore structure.

24. The polymer of claim 18, wherein the polymer exhibits a tensile modulus of 850 kPa or higher.

25. A method for drug delivery which comprises introducing a drug contained within a porous polymer of claim 18.

26. A method for drug delivery according to claim 25, wherein the drug is a growth factor contained within the polymeric structure of a polymer bead which is contained within the porous polymer.

27. A method for tissue engineering which comprises introducing as a matrix for the tissue a porous polymer of claim 18.

28. A method for cell transplantation comprising administering a combination of a porous polymer of claim 18 and cells for transplantation.

29. A method for cell culturing which comprises culturing cells in the pores of a porous polymer of claim 18.

30. A polymer material which comprises a section of porous polymer comprising a polymer matrix containing pores formed by gas foaming and pores formed by leaching out of a particulate from the polymer and a section of impermeable polymer integrally connected.

31. The polymer material of claim 30, wherein the porous polymer has a uniform open pore structure and the impermeable polymer is of the same polymer material but without an open pore structure.

32. A method for guided tissue regeneration which comprises introducing to the location requiring tissue regeneration a polymer material according to claim 30.

33. The polymer material of claim 30, wherein the porous polymer and the impermeable polymer are of different polymer material.

34. The polymer of claim 18, which further comprises a drug contained within the pores of the porous polymer.

35. The polymer of claim 18, which further comprises viable cells within the pores of the porous polymer.

36. The polymer material of claim 28, which further comprises within the pores of the section of porous polymer viable cells for tissue regeneration.